FGGM Regulation 40-1

Installation

SAFETY ERGONOMICS PROGRAM

Headquarters
US Army Garrison
Fort George G. Meade MD
6 July 2006

DEPARTMENT OF THE ARMY
U.S. ARMY GARRISON, FORT MEADE
FORT GEORGE G. MEADE, MARYLAND 20755-5035

6 July 2006

Safety
ERGONOMICS PROGRAM

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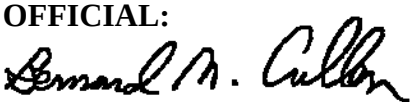

BERNARD CULLEN
Director of Human Resources
Fort Meade

History. This is a new regulation.

Summary. This regulation prescribes policy, procedures, and responsibilities for the establishment of an ergonomics program for the Fort George G. Meade (FGGM) Community.

Applicability. This regulation applies to all Garrison activities on FGGM property. It also applies to tenant activities that are assigned to FGGM.

Proponent. The proponent of this regulation is the Installation Safety Office, Fort George G. Meade, MD.

Supplementation. Supplementation of this regulation without prior approval of Installation Safety Office, Fort George G Meade, MD is prohibited.

Suggested Improvements. Users are invited to send comments and suggested improvements to this regulation on DA Form 2028 (Recommend Changes to Publications and Blank Forms) to Commander, U. S. Army Garrison Fort Meade, ATTN: IMNE-SO, 4550 Parade Field Lane, Fort George G. Meade, MD 20755-5005.

Distribution. This regulation is available in electronic media at the Fort Meade intranet site.

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APPENDIX B, GLOSSARY

1-1. PURPOSE. This regulation prescribes policy, procedures, and responsibilities for the establishment of an ergonomics program for the FGGM community as described in AR 40-5, Preventive Medicine.

1-2. REFERENCES. Required and related publications are listed in Appendix A.

1-3. EXPLANATION OF ABBREVIATIONS AND TERMS. Abbreviations and special terms used in this regulation are explained in the glossary, Appendix B.

1-4. BACKGROUND.

a. Ergonomic programs are essential elements of Safety and Occupational Health (SOH) programs as discussed in AR 40-5, Preventive Medicine, DAPAM 40-21, Ergonomics Program, and AR 385-10, The Army Safety Program. An effective ergonomic program can:

(1) Prevent workplace injuries.

(2) Reduce medical and associated costs of ergonomic disorders.

(3) Preserve the fighting strength of the Armed Forces.

b. Regulatory requirements for the ergonomic programs fall under the DA Pam 40-21 section 1-4.d.(1), (2), and (3) for references as well as:

(1) Executive Order 12196

(2) General Duty Clause, Section 5(a) (1) of the OSH Act.

(3) Rehabilitation Act of 1973, as amended by the Americans with Disabilities Act of 1990.

1-5. APPLICABILITY. This regulation applies to FGGM military and civilian garrison and tenant worksites analysis, hazard prevention, control, health care management, and education and training programs.

2-1. RESPONSIBILITIES.

a. **Garrison Commander.** Garrison Commander will—

(1) Establish an Ergonomics Committee and integrate ergonomics into all phases of the Safety and Occupational Health Program.

(2) Approve the installation ergonomics policy and plan based on the recommendations of the FGGM Ergonomics Committee.

(3) Designate an Installation Ergonomics Officer (IEO).

(4) Select members of the Ergonomics Committee based on recommendations from the Installation Safety Office and the Installation Ergonomics Officer.

(5) Work with installation and tenant personnel, the union, and the appropriate regulatory authorities to effectively address ergonomic issues.

(6) Provide Ergonomic Program support to tenant activities as part of the Safety and Occupational Health services provided by the local installation support agreement. The support extends to all tenant activities.

b. **Tenant Commanders.** Subordinate commanders and Commanders of activities will--

(1) Appoint an Ergonomic Committee representative.

(2) Develop an organizational ergonomics program and/or policy as defined in 385-10 and DA PAM 40-21.

(3) Support their ergonomic program's administrative logistical requirements.

(4) Ensure that worksite evaluations are conducted IAW this regulation.

(5) Ensure that supervisors are trained on ergonomic standards and worksite evaluations.

c. **MEDDAC Commander, KACC, IMA.** The IMA will--

(1) Advise the garrison commander on appropriate individuals for membership on the Ergonomic Committee.

d. **Installation Ergonomics Officer.** The IEO is an Installation Safety Office asset and is a qualified health or safety professional that has received at least 40 hours of formal ergonomic training. The IEO will--

(1) Chair the Ergonomic Committee and provide an interface to the Safety and Occupational Health Advisory Council (SOHAC).

(2) Develop and implement the installation ergonomic policy and plan, with the assistance of the Ergonomic Committee and approval of the Installation Commander/Installation Safety Manager.

(3) Ensure Ergonomic Committee members are trained to identify, assess, control, and prevent Work-related Musculoskeletal Disorders (WMSDs).

(4) Ensure accurate program record keeping and periodic evaluation and review of program objectives, and report results of the evaluation to the SOHAC at least semiannually.

e. **Ergonomics Committee**. Based on local personnel resources, the Ergonomic Committee may consist of representatives from industrial hygiene, safety, health care (physician, occupational health nurse, occupational and physical therapists, physician's assistant), human resources, tenant activities, and local union. Advisory members may include representatives from the Directorate of Contracting and the Directorate of Logistics. The Ergonomics Committee will--

(1) Oversee and participate in-

(a) Developing and implementing the installation ergonomic policy and plan.

(b) Identifying existing and potential WMSDs through workplace analysis that involves both active and passive surveillance.

(c) Setting priorities for abatement of identified WMSDs.

(d) Identifying and implementing corrective actions.

(e) Providing appropriate worker and supervisor training.

(f) Coordinating efforts with medical personnel.

(g) Evaluating effectiveness of corrective actions and documenting the results.

(h) Reporting at least semiannually to the SOHAC.

(i) Attending ergonomic training provided by the Installation Ergonomics Officer.

(j) Attending committee meetings or send alternate.

(k) Providing information about problematic work areas.

(l) Coordinate and participate in their activity work area assessments, solution identification, employee training and education efforts, and health care management.

(2) Brief their activity Commander on Ergonomic Program issues, activities, and recommendations.

f. **Installation Safety Office.** Installation Safety Office will—

(1) Provide the asset to serve as the IEO.

(2) Oversee the safety aspects of the ergonomic effort.

(3) Coordinate the annual Standard Army Safety and Occupational Health Inspection and consider ergonomic risk factors as part of their inspections. Ensure that documentation and follow-up on corrective measures will also be a part of the installation hazards abatement procedure.

(4) Review injury and illness records related to ergonomic problems, develop trend analyses, and report results to the Ergonomic Committee.

(5) Provide or assist with ergonomic training and education.

(6) Coordinate with Directorate of Contracting on the purchase of new furniture to include, but limited to; chairs, office tables, desks, etc. to ensure the integration of sound, ergonomically designed work stations.

g. **Kimbrough Ambulatory Care Center (KACC), Industrial Hygiene.** Kimbrough Ambulatory Care Center, Industrial Hygiene will—

(1) Review all written plans/policies which are developed for the early recognition, and follow-up of WMSDs among military and civilian personnel.

(2) Consider ergonomic hazards during routine worksite evaluations.

(3) Assist in solving problems related to identified WMSDs.

(4) Keep accurate records of identified ergonomic hazards and solutions and provide these records to the Ergonomics Committee for review and tracking.

(5) Provide or assist in ergonomic training and education for military and civilian personnel. Personnel tasked to provide training should obtain refresher ergonomics training to maintain expertise.

(6) Work with medical personnel in the identification of potential WMSDs and advise medical personnel on ergonomic changes related to the workstation, tasks, and tools.

(7) Provide at least one representative from KACC Preventive Medicine/Industrial Hygiene to serve on the Ergonomics Committee.

h. **Kimbrough Ambulatory Care Center, Occupational Health.** Kimbrough Ambulatory Care Center, Occupational Health will—

(1) Develop and conduct baseline medical screening for new employees.

(2) Assist trained ergonomic personnel in the identification of light or restricted duty jobs.

(3) Make specific recommendations to the Civilian Personnel Advisory Center (CPAC) or unit on the assignment of injured workers to light or restricted duty jobs.

(4) Provide employee training and education during medical surveillance, pre-employment fitness for duty, and job injury/illness encounter.

(5) Provide at least one representative from specific health care areas (for example, nurse, occupational and physical therapists, physician, physician's assistant) to serve on the Ergonomic Committee.

i. **Civilian Personnel Advisory Center**. Civilian Personnel Advisory Center (CPAC) will-

(1) Use local medical treatment facility (MTF), Occupational Health Program, health care personnel, and Ergonomic Committee recommendations and concerns in the employment placement office.

(2) Ensure newly appointed supervisors, managers, and employees receive ergonomic training during in-processing by way of informational material provided by the ISO.

(3) Maintain the installation log of lost duty time as a result of injury or illness (Log of Federal Occupational Injuries and Illnesses, or equivalent), and provide this information for review by the Ergonomic Committee.

(4) Provide a representative from the CPAC to serve on the Ergonomic Subcommittee. This may be the Federal Employee Compensation Act (FECA) Administrator or other support personnel.

j. **Directorate of Contracting.** Directorate of Contracting will-

(1) Coordinate with ISO to ensure the integration of ergonomic considerations before the purchase of new equipment.

(2) Coordinate with ISO to inquire recommendations to reduce ergonomic hazards on purchases of future furniture.

(3) Provide a representative from the Directorate of Contracting to serve on the Ergonomic Subcommittee.

k. **Directorate of Logistics**. Directorate of Logistics will-

(1) Coordinate with the ISO as to integrate ergonomic considerations into facility modifications and construction.

(2) Provide a representative from the Directorate of Logistics to serve on the Ergonomic Committee.

(3) Ensure integration of ergonomic considerations into the purchase of new equipment.

(4) Consult with the Ergonomic Committee and trained ergonomic personnel to assist in the evaluation of equipment and furniture for ergonomic design.

l. **Union Representatives**. Union Representatives may-

(1) Serve as a member of the Ergonomic Committee.

(2) Ensure that key personnel recognize and report ergonomic hazards.

(3) Ensure that all unions at FGGM are offered the opportunity to appoint an advisor or support member to the Ergonomic Subcommittee.

m. **Supervisors.** Supervisors will-

(1) Ensure employees:

(a) Follow safe work practices.

(b) Recognize and correct hazardous work practices.

(c) Report early symptoms of potential ergonomic disorders to KACC Occupational Health in a timely manner.

(2) Routinely review areas for potential ergonomic risks.

(3) Coordinate with the Ergonomic Committee, ISO, IEO, or unit CDSR to reduce risks and support the overall ergonomic effort.

(4) Maintain responsibility for injury prevention and the identification and resolution of WMSDs and associated risk factors.

n. **Military and civilian personnel.** Military and civilian personnel will participate in the ergonomic effort by-

(1) Modifying work practices as recommended.

(2) Notifying supervisors of potential ergonomic hazards in the workplace.

(3) Recognizing and reporting symptoms early.

(4) Participating in the medical surveillance program.

(5) Performing recommended conditioning activities.

(6) Actively participating in the suggestion process.

(7) Ensuring that CDSR's are adequately trained by the ISO on ergonomics related issues.

(8) Maintaining responsibility for injury prevention and the identification and resolution of WMSDs and associated risk factors.

o. **Technical assistance**.

The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) will provide an Ergonomic Program Training Course when requested. Point of contact is DSN 584-3928 or COM 410 436-3928.

3-1. ERGONOMIC PROGRAM ELEMENTS.

a. Goals

(1) The goals of the program are to:

(a) Prevent injuries and illnesses by eliminating or reducing worker exposure to ergonomic hazards.

(b) Reduce the potential for fatigue, error, and unsafe acts by adapting the job and workplace to the worker's capabilities and limitations.

(2) Emphasize early identification and prevention of ergonomic injuries to preserve and protect our military and civilian work force while decreasing related costs.

b. Organizational involvement: A collaborative partnership between all levels of the working community is essential to achieve these goals. Command emphasis, commitment by management, and demonstrated visible involvement are imperative to provide the organizational resources and motivation necessary to implement a sound ergonomic policy. Input from all employee levels (manager, supervisor, worker, and soldier) is needed for program success.

c. Effects of ergonomic illness and injury.

(1) Health effects. Ergonomic disorders include occupationally related neuromuscular disorders caused or aggravated by repeated biomechanical stress and microtrauma. Over time, repeated microtrauma can evolve into a painful, debilitating state involving muscles, tendons, tendon sheaths, and nerves. Tendonitis, tenosynovitis, bursitis, chronic muscle strain, and nerve entrapment syndromes are examples of ergonomic disorders. Non-work activities can also cause ergonomic disorders.

(2) Ergonomic effects. The expense associated with a poorly designed workplace is considerable and includes both direct and indirect costs.

(a) Direct costs include medical treatment, rehabilitation, and worker's compensation.

(b) Indirect costs include lost work time, decreased productivity, decreased work quality, retraining costs, and diminished morale.

d. Ergonomic risk factors:

(1) Research identifies the following as specific workplace conditions that can contribute to the development of ergonomic disorders:

(a) Repetitive motions (especially during prolonged activities)

(b) Sustained or awkward postures (standing, sitting, lifting, et cetera).

(c) Excessive bending or twisting of the wrist.

(d) Prolonged elbow or shoulder extension (for example, overhead work).

(e) Forceful exertions (especially in an awkward posture).

(f) Excessive use of small muscle groups (for example, pinch grip).

(g) Acceleration and velocity of dynamic motions.

(h) Vibration.

(i) Mechanical compression.

(j) Restrictive workstations (for example, inadequate clearances).

(k) Improper seating or support.

(l) Inappropriate hand tools.

(m) Machine-pacing and production-based incentives.

(n) Extreme temperatures.

(o) Extended exposure to noise.

(2) The combined effect of several risk factors in one job or workstation may lead to a higher probability of causing an ergonomic disorder.

3-2. WORKSITE ANALYSIS.

a. Problem Identification: Use the following procedures of systematic passive and active surveillance to identify jobs or worksites with ergonomic risk factors.

(1) Systematic passive surveillance involves the analysis of data provided in existing monthly or quarterly reports. This analysis can identify ergonomic problems, set intervention priorities, and organize the ergonomic effort. Sources of data include:

(a) Routine injury and illness reports.

(b) OSHA No. 300 (Bureau of Labor Statistics Log and Summary of Occupational Injuries and Illnesses) or equivalent.

(c) FECA claims.

(d) Medical and safety records.

(e) Work force reports and suggestions.

(2) Systematic active surveillance involves focused and active efforts to gather information about ergonomic hazards at worksites and identify workers at risk of developing a cumulative trauma disorder. Use active surveillance in conjunction with regular training or industrial hygiene or safety surveys.

(a) Systematic active surveillance should be performed at all worksites at least once per year. Walk-through surveys should also be performed for any new or significantly changed job, process, equipment or method.

(b) Examples of active surveillance procedures include:

(1) Questionnaires and surveys. Supervisor and worker questionnaires and symptom or body part discomfort surveys provide information about ergonomic hazards, often before actual injuries occur.

(2) Observation. Direct observation by trained ergonomic personnel conducting regular walk-through industrial hygiene surveys (for input into the Health Hazard Information Module (HHIM)) or safety surveys can identify ergonomic hazards. Worker interviews during these surveys can identify tasks or situations that are uncomfortable and may indicate ergonomic risks. For example, workers know that cold temperatures make it difficult to grip hand tools.

(3) Sentinel event or incident reporting. Specific health or performance events, such as wrist pain, back pain, or increased errors, may be indicative of ergonomic risks. A specific reporting procedure should be used to facilitate reports.

(4) Case referrals. Case referrals my be used to identify a work area with potential ergonomic risks. For example, a laboratory technician seeks medical care for hand and wrist pain and provides an occupational history that indicates possible worksite risk factors.

(c) In many cases, corrections to the ergonomic hazards are simple, quick, on-the-spot workplace changes. Ergonomic personnel conducting regular walk-through surveys can identify and implement the solution immediately.

(d) If a worksite or job is identified as high risk, special medical surveillance may be indicated.

b. Prioritization: Worksites should be prioritized for detailed analyses based on the passive and active surveillance information. The prioritization may be based on incidence rates, the number of workers affected, direct costs, lost work time, or severity of cases. Calculate incidence and prevalence rates by unit, work section, or job series to identify high risk areas. Use FECA claims information to identify high cost injuries and high risk work areas.

c. Detailed Analysis:

(1) Detailed analysis is necessary for further evaluation of those jobs or worksites having ergonomic risk factors as determined by systematic passive and active surveillance. When conducting the detailed analysis, trained ergonomics personnel should systematically:

(a) Consider the concept of multiple causation (see glossary for definition) and the degree of ergonomic risk.

(b) Look for trends, including age, gender, work task, and time of injury.

(c) Identify the work tasks or portions of the process that contain risk factors; and

(d) Identify both problems and solutions.

(2) The following data, analysis tools, and methods may be helpful during a detailed analysis:

(a) Incidence rates (OSHA No. 300 or equivalent), accident and injury reports, and lost work time or absenteeism reports by job, unit, department, or facility.

(b) Checklists, questionnaires, and interviews.

(c) Direct observation, videotape analysis, and job analyses.

(d) Tests.

(1) Revised National Institute for Occupational Safety and Health (NIOSH) Equation for the Design and Evaluation of Manual Lifting Tasks.

(2) Static and dynamic strength testing.

(3) Engery expenditure evaluation.

(4) Timed activity analysis.

(5) Biomechanical analysis.

(6) Cardiovascular or metabolic measurements.

4-1. PREVENTION AND CONTROL OF ERGONOMIC HAZARDS.

a. Intervention hierarchy: The primary method of preventing and controlling exposure to ergonomic hazards is through effective design (or redesign) of a job or worksite.

b. Process elimination: Elimination of the ergonomically demanding process essentially eradicates the hazard. For example, eliminate a meat wrapper's need to use a manual tape dispenser and label applicator by providing an automatic label and tape dispenser.

c. Engineering controls: Ergonomic engineering controls redesign the equipment or worksite to fit the limitations and capabilities of workers. Equipment or worksite redesign typically offers a permanent solution. For example, provide a visual display terminal workstation that can be adjusted to a wide range of anthropometric dimensions.

d. Substitution: Substituting a new work process or tool (without ergonomic hazards) for a work process with identified ergonomic hazards can effectively eliminate the hazard. For example, replace hand tools that require awkward wrist positions (extreme wrist flexion, extension, or deviation) with tools that allow a neutral wrist posture.

e. Work practices: Practices that decrease worker exposure to ergonomic risks include changing work techniques, providing employee conditioning programs, and regularly monitoring work practices. It also includes equipment maintenance, adjustment, and modification of current equipment and tools, if necessary.

(1) Proper work techniques include methods that encourage correct posture, use of proper body mechanics, appropriate use and maintenance of hand and power tools, and correct use of equipment and workstations.

(2) Employee conditioning refers to the use of a conditioning or break-in period. New and returning employees may need gradual integration into a full workload, depending on the job and on the employee. Supervisors, trained ergonomics personnel and health care personnel should identify those jobs that require a break-in period. Health care personnel should evaluate those employees returning from a health-related absence and define the break-in period for each individual employee.

(3) Regular monitoring of operations helps to ensure proper work practices and to confirm that the work practices do not contribute to cumulative trauma injury or hazardous risk factors.

(4) Effective schedules for facility, equipment, and tool maintenance, adjustments, and modifications will reduce ergonomic hazards. This includes ensuring proper working condition, having sufficient replacement tools to facilitate maintenance, and ensuring effective housekeeping programs. Tool and equipment maintenance may also include vibration monitoring.

f. Administrative controls: Administrative controls can be used to limit the duration, frequency, and severity of exposure to ergonomic hazards. Examples of administrative controls include, but are not limited to:

(1) Reducing the number of repetitions by decreasing production rate requirements and limiting overtime work.

(2) Reducing the number and speed of repetitions by reducing line or production speed by having worker input into production speed (that is, using worker-based rather than machine-based production speed).

(3) Providing rest breaks to relieve fatigued muscle-tendon groups. Determine the length of the rest break by the effort required, total cycle time, and the muscle-tendon group involved.

(4) Increasing the number of employees assigned to the task (for example, lifting in teams rather than individually).

(5) Instituting job rotation as a preventive measure, with the goal of alleviating physical fatigue and stress to a particular set of muscles and tendons. Do not use job rotation in response to symptom development in all employees involved in rotation schedule rather than preventing problems. Trained ergonomics and health care personnel should conduct an analysis of the jobs used in the rotation schedule.

(6) Providing light or restricted duty assignments to allow injured muscle-tendon groups time to rest, assisting in the healing process. Make every effort to provide light or restricted duty assignments when physical limitations (as identified by a health care provider) allow the worker to return to work performing less than his or her normal work requirements. In regard to light or restricted duty assignments:

(a) A health care provider reviews job requirements and makes recommendations for job assignments or job tasks for the individual worker based on his or her symptoms, capabilities, and limitations

(b) A health care provider will review a list of all jobs with low ergonomic risks, as developed by ergonomic trained personnel, and provide recommendations as indicated.

(c) Job descriptions for each light duty position should be written. Civilian personnel representatives and supervisors, in conjunction with health care personnel, should identify light duty positions and write job descriptions for light and restricted duty positions that conform to documented requirements. The job description for each light duty position should include ergonomic risk factors and muscle-tendon groups required to perform the job.

g. Personal Protective Equipment (PPE): Personal protective equipment is not necessarily recommended for controlling exposure to ergonomic hazards, as little research has been conducted to support claims of its usefulness.

(1) Ergonomic appliances, such as wrist rests, back belts, back braces, etc, are not considered to be PPE. Before purchasing such devices, discuss their effectiveness with the ISO.

(2) Consider ergonomic hazards when selecting PPE. The PPE:

(a) Should be available in a variety of sizes.

(b) Should accommodate the physical requirements of the workers and the job.

(c) Should not contribute to ergonomic hazards.

5-1. HEALTH CARE MANAGMEENT.

a. Early evaluation of patients: Early recognition and medical management of ergonomic disorders are critical to reduce the impact of injury on both the employee and the employer.

(1) Common symptoms of musculoskeletal ergonomic disorders can include (but are not limited to) pain, tingling, numbness, stiffness, and weakness in the neck, shoulders, arms, hands, back, and legs. Other symptoms can include headaches, visual fatigue, and increased errors.

(2) Soldiers and employees with symptoms of ergonomic disorders should report to medical personnel for an evaluation.

(a) Active duty soldiers should report to their primary care provider (PCP).

(b) Civilian employees should complete appropriate forms for ergonomic disorders. Call the Occupational Health Clinic for an appointment and/or schedule an appointment with their private physician of choice.

(3) Supervisors should ensure that symptomatic soldiers and civilian employees report for a medical evaluation in a timely manner.

(4) Disincentives for employee reporting must be avoided.

b. Medical evaluation: The initial evaluation of a patient with a possible ergonomic disorder should include a detailed medical occupational history and a physical examination. Health care personnel should:

(1) Complete a medical and occupational history that includes:

(a) Military occupational specialty or job title and number of years and months at the job.

(b) Prior work history.

(c) Detailed description of current job tasks and amount of time normally spent on each task.

(d) Detailed description of symptoms to include location, character (such as burning, sharp, dull, pins, and needles), severity, onset, duration, exacerbating and relieving factors.

(e) Lost time or limited duty due to symptoms.

(f) Prior evaluation, diagnosis, and treatment of symptoms.

(g) Other existing medical conditions and history of trauma and surgery.

(h) Activities and hobbies outside of work.

(i) Current medications.

(2) Conduct a physical examination that includes, but need not be limited to:

(a) Appearance (swelling, muscle atrophy, erythema-redness of skin, ecchymosis-small blue or purplish patch).

(b) Range of motion and muscle strength.

(c) Neurologic assessment (motor, sensory, reflexes).

(d) Vascular assessment (pulses, capillary refill).

(e) Evaluation for pain and tenderness.

(f) Special tests, such as median nerve percussion (Tinel's sign) and the wrist flexion test (Phalen's test), when appropriate.

(3) Perform additional testing as indicated, such as nerve conduction velocities, laboratory tests, and radiographic procedures.

c. Treatment: Health care personnel should initiate appropriate treatment and rehabilitation as defined by current standards of medical practice. In general, try conservative therapy before invasive treatment.

(1) Supervisors, CPAC should encourage civilian employees with a suspected work-related ergonomic disorder to seek evaluation from their private medical doctor (PMD) who will determine if the medical condition is caused and or exacerbated by ergonomic factors. The employee reports the concern to Occupational Health along with appropriate documentation. Copies of this documentation are forwarded to CPAC and the ISO. The employee follows up with CPAC to file a workers compensation claim, if indicated.

(2) Active duty soldiers with a suspected work-related ergonomic disorder should be seen in an Army MTF.

d. Light or restricted duty: Health care personnel should coordinate with trained ergonomics personnel to recommend duty assignments that will not aggravate a patient's condition.

e. Follow-up: Medical personnel should perform regular follow-up for patients being treated for ergonomically related injuries and illnesses to monitor the efficacy of therapy and worksite intervention.

f. Worksite surveillance:

(1) A general screening medical surveillance program is not indicated for ergonomic injuries. Trained ergonomics personnel should:

(a) Conduct periodic, systematic worksite walk-through evaluations to remain knowledgeable about operations and work practices. A minimum of once very 6 months is suggested.

(b) Provide written documentation of the walk-through evaluation. Documentation should include date, areas(s) visited, risk factors identified, and actions taken (if any). If prioritized follow-up is needed, it should also be documented.

(2) Special surveillance may be indicated for:

(a) Specific job where a high incidence of ergonomic injuries or illnesses has been demonstrated.

(b) Specific jobs that have been identified as high risk based on systematic active surveillance and detailed analysis.

g. Reporting occupational health, safety, and health care personnel should use the following forms to document work-related ergonomic disorders:

(1) OSHA No. 300 or equivalent.

(2) CA-2 (all cumulative disease disorders except back injuries).

(3) CA-1, CA-16, CA-17 (Duty Status Report) (back injuries).

(4) SF 600 (Health Record--Chronological Record of Medical Care) in the medical record.

(5) DA Form 3075 (Occupational Health Daily Log).

(6) DA Form 285 and DA Form 285-AB-R, (U.S. Army Accident Report) for reporting military occupational illnesses according to Chapter 3-5, AR 385-40, Accident Reporting and Records.

h. Worksite evaluation referrals:

(1) Health care personnel who are treating a patient with a suspected work-related CTD should request a worksite evaluation for the patient through the IEO and the Ergonomics Subcommittee. Trained ergonomics personnel should conduct the worksite evaluation.

(2) Flow diagrams depicting the handling of traumatic injury and occupational disease and illness are available from USACHPPM.

6-1. EDUCATION AND TRAINING.

a. The “train the trainer” concept administers training programs in a pyramid fashion.

(1) Ergonomic experts provide training to develop trained ergonomics personnel.

(2) Trained ergonomics personnel:

(a) Then train others at the installation level, including supervisors and workers.

(b) May also train special assistants, who can help with recognizing ergonomic hazards. The special assistants may be representatives from each department or division who assist other department members in recognizing and reporting ergonomic hazards.

b. Education:

(1) The IEO will have:

(a) A minimum of 40 hours of formal ergonomics training.

(b) Training and experience sufficient to identify ergonomic hazards and risk factors.

(2) Trained ergonomics personnel should have:

(a) A minimum of 40 hours of formal ergonomics training.

(b) Training and experience sufficient to identify ergonomic hazards and risk factors.

(3) Core Ergonomics Subcommittee members, support and advisory Ergonomics Subcommittee members, and installation-level personnel providing assistance in recognizing ergonomic hazards should have basic ergonomics training.

c. Training: Personnel responsible for administering the program should receive appropriate special training. Training is necessary for all levels of civilian employees and active duty soldiers to enable them to understand and recognize potential ergonomic hazards and actively participate in the ergonomics effort.

(1) Personnel requiring training:

(a) All affected employees.

(b) Supervisors.

(c) Managers.

(d) Engineers and maintenance personnel.

(2) The instructor:

(a) Trained ergonomics personnel should conduct training.

(b) Suitable health care personnel should conduct specific portions of training, such as those related to health risks.

(3) Curriculum considerations. Trained ergonomics personnel should:

(a) Present training at a level appropriate to ensure audience comprehension.

(b) Include in the training curriculum an overview of:

(1) The potential risk of ergonomic disorders.

(2) The possible causes and symptoms.

(3) How to recognize and report symptoms.

(4) The means of prevention.

(5) The sources of treatment.

(c) Include methods for evaluating the effectiveness of the ergonomics effort.

(d) Types of training.

(1) General in-processing training. Employees who are potentially exposed to ergonomic hazards should receive formal instruction on hazards associated with their jobs and equipment. Employees should receive training at an initial orientation and annually thereafter electronically.

(2) Specific training. New employees and reassigned workers should receive an initial orientation and hands-on training from trained ergonomics personnel and the immediate supervisor prior to being placed in a full-production position. The initial orientation should include;

(3) A demonstration of the proper use and care of, and the proper operating procedures for, all tools and equipment.

(4) Use of safety equipment.

(5) Use of safe and proper work procedures, such as proper lifting techniques.

7-1. ERGONOMICS PROGRAM EVALUATION.

a. Internal evaluations: The IEO ensures evaluation of the ergonomics effort regarding program participation and effectiveness. Methods of measuring both of these elements are listed below:

(1) Program participation:

(a) Number of requests for ergonomic assistance by management occurring during a specified period.

(b) Number of employee suggestions related to ergonomics during a specified period.

(c) Number of education programs in ergonomics offered or number of personnel attending educational programs listed on a quarterly basis within one year of program implementation.

(2) Program effectiveness:

(a) Number of general or systematic identifications of potential ergonomic hazards.

(b) Number of detailed analyses conducted.

(c) Number of high priority listings relating to ergonomics.

(d) Decrease in the incidence rate (see glossary) of ergonomically related FECA claims or dollar amount of new FECA claims within a particular period.

(e) Decrease in the incidence rate of ergonomically related illness or injury reports filed for military and for civilians.

(f) Decrease in the incidence rate of ergonomically related illness or injury by department or unit.

(g) Decrease in the incidence rate of lost or restricted duty time due to ergonomically related illness or injury.

(h) Decrease in the number of new job reassignments due to ergonomically related illness or injury.

(i) Decrease in productivity or production costs that can be attributed to ergonomic interventions. In some cases, there may be an increase in illness or injury reporting at the start of an ergonomics program due to increased employee and supervisor awareness. This reporting rate decreases as the program becomes established within one year of program implementation.

b. External evaluations: Ergonomics program personnel at United States Army Center for Health Promotion and Preventive Medicine (USACHPPM), on request from the installation, can-

(1) Assist with development of an ergonomics program.

(2) Evaluate elements of the ergonomics program.

(3) Conduct installation ergonomics surveys.

c. Regular evaluation and review.

(1) The IEO and the Ergonomics Committee:

(a) Conduct at least a semiannual program evaluation and review.

(b) Present the results of this program evaluation and review to the SOHAC/ISO Manager.

(c) Communicate the results of the program evaluation and review to top management and all workplace personnel.

(2) The program evaluation assesses the implementation, progress, and effectiveness of the ergonomics plan. It should include:

(a) Summary progress report or program update.

(b) Plans, goals, and accomplishments for the program as a whole and by the critical program elements. The critical program elements are located in DA PAM 40-21 para 2-4a (3). Accomplishments should include intervention results in terms of incidence rate changes, productivity improvements, and economic results.

(c) Identification of trends, deficiencies, and corrective action needed.

(d) New or revised program goals, priorities, and time lines.

(3) The following information can be used to develop the evaluation and review.

(a) Analysis of trends in injury or illness rates according to:

(1) Health care facility sign-in logs.

(2) OSHA No. 300 or an equivalent log.

(3) Individual employee medical records.

(4) The Health Hazard Information Module (HHIM).

(b) Review of results of installation evaluations.

(c) Before and after surveys or evaluation of worksite improvements.

(d) Observation of work practices to determine the effect of training and education.

(e) Employee surveys or interviews conducted by department, job title, or work area to monitor trends.

APPENDIX A
REFERENCES

SECTION I
Required References

AR 40-5
Preventive Medicine

AR 385-10
The Army Safety Program

AR 385-40
Accident Reporting and Records

AR 690-800
Insurance and Annuities

SECTION II
Related Publications

A related publication is merely a source of additional information. The user does not have to read it to understand this regulation.

AR 40-10
Health Hazard Assessment Program

DA PAM 40-21
Ergonomics Program, 15 August 2003

DODI 6055.1
DOD Safety and Occupational Health Program

EO 12196
Occupational Safety and Health Programs for Federal Employees

SECTION III
Referenced Forms

CA-1
Federal Employee's Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation

CA-2
Notice of Occupational Disease and Claim for Compensation

CA-16
Authorization for Examination and/or Treatment

CA-17
Duty Status Report

DA Form 285
U.S. Army Accident Report

DA Form 285-AB-R
U.S. Army Abbreviated Ground Accident Report

DA Form 3075
Occupational Health Daily Log

DA Form 3076
Army Occupational Health Report

OSH Hazard Abatement Log

OSHA No. 300

Bureau of Labor Statistics Log and Summary of Occupational Injuries and Illnesses

SF 600
Health Record--Chronological Record of Medical Care

APPENDIX B
GLOSSARY

SECTION I
Abbreviations

ARNGUS
Army National Guard of the United States

CRC
Combat Readiness Center

DA
Department of the Army

FECA
Federal Employee Compensation Act

IEO
Installation Ergonomic Officer

IMA
Installation Medical Authority

MACOM
Major Army Command

MTF
Medical Treatment Facility

NIOSH
National Institute for Occupational Safety and Health

OSH
Occupational Safety and Health

OSHA
Occupational Safety and Health Administration

PPE

Personal Protective Equipment

SOH
Safety and Occupational Health

USACHPPM
U.S. Army Center for Health Promotion and Preventive Medicine

WMSDs
Work-related Musculoskeletal Disorders

SECTION II
Terms

Anthropometry - Refers to the study of the physical dimensions of people, including size, breadth, girth, distance between anatomical points, and joint range of motion. This information is used in the design and analysis of work-spaces, tools, and equipment.

Cumulative Trauma Disorders (CTDs) - CTDs are ergonomic disorders of the musculoskeletal or nervous system, which are the result of, or contributed to by, the risk factors listed in paragraph 3-1d(1). CTDs are a class of work-related musculoskeletal disorders involving damage to the tendons, tendon sheaths, synovial lubrication of the tendon sheaths, and the related bones, muscles, and nerves. Synonymous terms include repetitive motion injury, occupational overuse syndrome, and repetitive strain injury.

Equivalent Civilian Training - Minimum of 40 hours training covering CTDs; workstation and job design; hand tool design; current regulatory requirements and issues; analysis and design of manual materials handling tasks; analysis and design of the office environment; and conducting, analyzing, documenting, and presenting an ergonomic worksite evaluation, including hands-on experience.

Ergonomics - Ergonomics is a body of knowledge about human abilities, human limitations, and other human characteristics that are relevant to the design of tools, machines, systems, tasks, jobs, and environments for safe, comfortable, and effective human use. The aim of the discipline is to fit the job to the person in order to:

a. Prevent the development of occupational injury or illness.

b. Reduce the potential for fatigue, error, or unsafe acts.

c. Increase effective, efficient work.

Ergonomic Disorders

a. Ergonomic disorders include the range of health problems arising from repeated stress to the body encountered in the workplace. These health problems may affect the musculoskeletal, nervous, and neurovascular systems, and include the various occupationally induced CTDs, cumulative stress injuries, and repetitive motion disorders.

b. Examples of ergonomic disorders include damage to tendons, tendon sheaths, synovial lubrication of the tendon sheaths, bones, muscles, and nerves of the hands, wrists, elbows, shoulders, necks, backs, and legs. Some ergonomic disorders that are reported include chronic back pain, carpal tunnel syndrome, DeQuervains disease, epicondylitis (tennis elbow), Raynaud's syndrome (white finger), synovitis, stenosing tenosynovitis crepitans (trigger finger), tendonitis, and tenosynovitis.

Ergonomics Expert or Ergonomics Professional

The ergonomics expert:

a. Possesses a recognized degree or professional credentials in ergonomics or human factors engineering (typically a master's or doctorate degree).

b. Demonstrates the ability to identify and correct ergonomic hazards in the workplace.

c. Teaches the Ergonomics courses whenever trained ergonomics personnel are unable to solve identified problems. Generally, an ergonomics expert is not available at each installation.

Ergonomics Team - The ergonomics team refers to workplace conditions that may harm the worker: Improperly designed workstations, tools and equipment; improper work methods; and excessive tool or equipment vibration are examples. Other examples include aspects of workflow, line speed, posture, force required, work and rest regimens, and repetition rates.

Health Care Personnel - Health care personnel include occupational therapists, physical therapists, physicians, physician assistants, nurses, and other health care professionals, and their related, supervised technicians (for example, certified occupational therapy assistants and licensed practical nurses). Health care personnel participating in the ergonomics and epidemiology assessments are required to remain up-to-date in the systematic recognition, evaluation, treatment, and rehabilitation of CTDs.

Rate (incidence, severity, prevalence):

a. Incidence (new case) rate (per 100) worker's per year):

$$\frac{\text{Number of new cases during the past 12 months x 200,000 hours}}{\text{Number of work hours during the past 12 months}}$$

b. Severity (lost workdays) rate (per 100 workers-years per year):

$$\frac{\text{Number of lost workdays during the past 12 months x 200,000 hours}}{\text{Number of work hours during the past 12 months}}$$

c. Prevalence (all cases during period) rate (per 100 workers-years per year):

$$\frac{\text{Total number of cases in the past 12 months x 200,000 hours}}{\text{Number of work hours during the past 12 months}}$$

d. Calculating rates:

(1) Use incidence rates whenever possible. Incidence rates measure new cases occurring over a period of time. Prevalence rates give a "snap shot" picture of the number of individuals affected at a specific point in time. Incidence rates and severity rates allow monitoring of changes over time, rather than recounting chronic problems throughout the duration of the illness or injury.

(2) Consistency in reporting is important; therefore, use incidence, severity, or prevalence rates for purposes of comparison.

(3) If the specific number of work hours during the past 12 months is not available, multiply the number of full-time equivalent employees in each area by 2,000 hours to obtain the denominator.

Microtrauma - Refers to a series of minor stresses to the body, each of which alone does not cause discernible damage; however, their accumulation over time can lead to ergonomic disorders. These disorders (injuries or syndromes) are also known as CTDs, overuse disorders, repetitive motion injuries, repetitive strain injuries, occupational motion-related injuries, regional musculoskeletal disorders, and work-related disorders.

Multiple Causation - The combined effect of several risk factors in one job, operation, or workstation, which may increase the possibility of CTDs.

Occupational Illness

a. Occupational illnesses are conditions diagnosed by a physician, registered nurse, or other qualified individual, such as, an occupational therapist, physical therapist, or physician's assistant.

b. Illnesses are classified as occupational, if the condition(s) meets the following criteria:

(1) Either physical findings or subjective symptoms must exist, that is, at least one physical finding (for example, positive Tinel's Phalen's, or Finkelstein's test; swelling, redness, or deformity; or loss of motion or strength) or at least one subjective symptom (for example, pain, numbness, tingling, aching, stiffness, or burning).

(2) At least one of the following response actions must occur: medical treatment (including self-administered treatment if made available to employees by their employer), lost or restricted work activity, or transfer or rotation to another job.

(3) CTDs are consistent with repeated trauma, with the onset of symptoms including aggravated or existing systems, caused or contributed to by exposure at work.

Pinch Grip - A grip that involves one or more fingers and the thumb.

Trained Ergonomics Personnel - Trained ergonomics personnel are health care, industrial hygiene, environmental science, safety, or engineering personnel with approved training in ergonomics. A minimum of 40 hours of formal ergonomics training, offered by USACHPP or by an equivalent civilian training program, is required for installation-level trained ergonomics personnel.

Working Community - The working community includes all members of the work environment, at all levels of authority. The success of the ergonomics program relies on the element that all members of the working community are considered equal and share program responsibility.

Worksite - Worksite refers to a work area or work environment.

Workstation - Workstation refers to an employee's work area, such as a desk, chair, and computer terminal or an individual inspection station.